

CLAIMS

1. A substrate treating apparatus comprising a processing chamber for processing at least one substrate, a substrate support member for supporting said at least one substrate, a prechamber for storing said substrate support member, and a control device for regulating the pressure to lower than atmospheric pressure during loading of said substrate support member supporting said at least one substrate from said prechamber into said processing chamber, wherein said substrate support member contains a support section to be contacted said substrate, and a receiving section installed below said support section and extending outwards from a section of the outer periphery of said support section.

2. A substrate treating apparatus according to claim 1, wherein said control device regulates the pressure during said loading so that the pressure is lower than atmospheric pressure, and higher than the pressure when once raising a vacuum within said prechamber prior to said loading.

3. A substrate treating apparatus according to claim 1, wherein said control device regulates the pressure during said loading so that the pressure is lower than atmospheric pressure, and higher than the pressure during substrate processing.

4. A substrate treating apparatus according to claim 1, wherein said control device regulates the pressure during

said loading so that the pressure is between 200 Pa and 3000 Pa.

5. A substrate treating apparatus comprising a processing chamber for processing at least one substrate, a substrate support member for supporting said at least one substrate in said processing chamber, a heater for heating said at least one substrate in said processing chamber, and depositing a thin film on said at least one substrate by CVD method, wherein said substrate support member contains a support section to be contacted said at least one substrate, and a receiving section formed below said support section and extending outwards from a section of the outer periphery of said support section, and said receiving section catches the particles generated on said support section.

6. A substrate treating apparatus according to claim 5 comprising a control member to regulate the processing temperature to 800°C or less.

7. A substrate treating apparatus according to claim 5 comprising a control member to regulate the processing temperature between 400°C and 800°C.

8. A substrate treating apparatus according to claim 5, wherein said thin film is a silicon film or a silicon nitride film.

9. A substrate treating apparatus comprising a processing chamber for processing at least one substrate, and a substrate support member for supporting said at least one substrate in said processing chamber, wherein said substrate support member contains a support section to be contacted said substrate, and a receiving section formed below said support section and extending outwards from a section of the outer periphery of said support section, and said receiving section extends between 6mm and 15mm from a section of the outer periphery of said support section.

10. A substrate treating apparatus comprising a processing chamber for processing at least one substrate, and a substrate support member for supporting said at least one substrate in said processing chamber, wherein said substrate support member contains a main section, and a support section to be contacted said substrate, and a receiving section formed below said support section and extending outwards from a section of the outer periphery of said support section, and said main section, said support section, and said receiving section are integrated into one piece.

11. A manufacturing method for a semiconductor device, said method comprising the steps of:

supporting at least one substrate in a substrate support member containing a support section to be contacted said substrate, and a receiving section formed below said

support section and extending outwards from a section of the outer periphery of said support section;

loading said substrate support member supporting said at least one substrate at a pressure lower than atmospheric pressure into said processing chamber;

processing said substrate supported by said substrate support member in said processing chamber; and

unloading said substrate support member supporting said substrate from said processing chamber.

12. A manufacturing method for a semiconductor device according to claim 11, wherein the pressure in said loading step is higher than the pressure when once raising a vacuum in the prechamber prior to said loading, and is lower than the atmospheric pressure.

13. A manufacturing method for a semiconductor device according to claim 11, wherein the pressure in said loading step is higher than the pressure during said substrate processing and is lower than the atmospheric pressure.

14. A manufacturing method for a semiconductor device according to claim 11, wherein the pressure in said loading step is between 200 Pa and 3000 Pa.

15. A manufacturing method for a semiconductor device, said method comprising the steps of:

loading at least one substrate into a processing chamber;

supporting said at least one substrate by a substrate support member made up of a support section to be contacted said substrate, and a receiving section formed below said support section and extending outwards from a section of the outer periphery of said support section for catching particles generated in said support section;

depositing a thin film by CVD method on said at least one substrate supported by said substrate support member in said processing chamber; and

unloading said substrate from said processing chamber.

16. A manufacturing method for a semiconductor device according to claim 15, wherein the temperature in said depositing step is 800°C or less.

17. A manufacturing method for a semiconductor device according to claim 15, wherein the temperature in said depositing step is between 400°C and 800°C.

18. A manufacturing method for a semiconductor device according to claim 15, wherein said thin film deposited on said substrate in said depositing step is a silicon film or a silicon nitride film.